



## Preface

Formerly known as the Natural Gas Conversion Symposium (NGCS), the triennial Novel Gas Conversion Symposium has been bringing together the industry and academic experts in synthesis gas production and utilization since 1987 to share information on the latest trends in research and technology development in these fields.

Upon decision of the Natural Gas Conversion Board (NGCB) in Natal, Brazil during the NGCS 8 in 2007, the ninth edition of the Novel Gas Conversion Symposium (NGCS 9) was organized by IRCELYON, IFP Energies Nouvelles and Total, with the valuable support of the Natural Gas Conversion Board (NGCB). From May 31 to June 4, 2010, more than 450 members of the gas conversion community gathered in Lyon, France, for an exceptional week of knowledge-sharing, networking, and discussion. The quality of the venue at the convention centre of Lyon was unanimously appreciated by the attendees and recognized as perfectly adapted to the format of the conference (<http://www.ngcb.org/>).

The subtitle of the ninth symposium, “C1–C4 chemistry: from fossil to bio resources”, acknowledged recent fast-paced developments of thermochemical biomass and waste conversion worldwide, that were discussed in a holistic way together with conversion of fossil resources to syngas, energy, synthetic natural gas, hydrogen, liquid fuels and chemicals.

Over five hundred contributions received from 43 countries covered at large the six topics of the scientific program: natural gas/biogas purification; syngas production, purification and chemistry, including clean coal, water gas shift, reverse water gas shift and synthetic natural gas; syngas conversion to synfuels, methanol, dimethylether and higher alcohols; direct/indirect conversion of methane to oxygenates, olefins and aromatics, C<sub>1</sub>–C<sub>3</sub> intermediates to chemicals; energy (catalytic combustion, hydrogen production from C<sub>1</sub>–C<sub>4</sub> gases) and novel concepts for feedstock activation (plasma, dense membranes, etc.); technical–economical studies, technology demonstration, industrial processes and plant operation.

The program of the Conference included five plenary lectures, among which the lecture given by Professor Anders Holmen as recipient of the NGCB's 2010 Award for Excellence in Natural Gas Conversion, 19 keynotes lectures, 115 oral presentations and 365 poster presentations. The presence of a large industrial audience, with 37 companies represented and 27% of the oral presentations from industries or with an industrial co-author, boosted cross-fertilization through vivid discussions during and in between the

sessions. Continued progress of both fundamental and applied research, with increased implementation of molecular modeling and advanced analytical techniques are indeed prerequisites for future improved gas conversion processes.

A selection of 7 papers is gathered in this special issue of Applied Catalysis B: Environmental, which were presented at the NGCS9 as oral or poster presentations. They highlight recent advances in catalytic transformations of fossil and biomass resources into energy, fuels and chemicals, needed to meet an increasing global demand. As such, these papers reflect either survey approaches when presented as plenary or key-note lectures, or, for most of them, original data presented according the standards of Applied Catalysis B: Environmental.

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Claude Mirodatos\*

Yves Schuurman

*Institut de recherches sur la catalyse et  
l'environnement de Lyon (IRCELYON, UMR 5256,  
CNRS-Université Claude Bernard Lyon1), 69626  
Villeurbanne Cedex, France*

Daniel Duprez

*Laboratoire de Catalyse en Chimie Organique  
(UMR6503) CNRS - Université de Poitiers, 40, Avenue  
du Recteur Pineau, 86022 Poitiers Cedex, France*

Francis Luck

*TOTAL S.A., 2 place Jean Millier, 92078 Paris la  
Défense Cedex, France*

\* Corresponding author.

E-mail addresses:

[claudio.mirodatos@ircelyon.univ-lyon1.fr](mailto:claudio.mirodatos@ircelyon.univ-lyon1.fr)

(C. Mirodatos),

[yves.schuurman@ircelyon.univ-lyon1.fr](mailto:yves.schuurman@ircelyon.univ-lyon1.fr)

(Y. Schuurman), [daniel.duprez@univ-poitiers.fr](mailto:daniel.duprez@univ-poitiers.fr)

(D. Duprez), [francis.luck@total.com](mailto:francis.luck@total.com) (F. Luck)

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